

CLAIMS

1. A device for inducing motion on fluids or solids, the device comprising:
a structure with a deformable sheet compressed to form a structural wave; and
5. an actuator for actuating the deformable sheet and driving the structural wave in a predetermined manner.

2. The device of claim 1, wherein the deformable sheet is a deformable plate, peripherally supported by a frame.

- 10 3. The device of claim 1, wherein the deformable sheet is a beam.

4. The device of claim 3, wherein the beam is coupled to an elastic foundation.

- 15 5. The device of claim 1, wherein a first wall is provided against the deformable sheet so as to define a first conduit between the first wall and the deformable sheet.

- 20 6. The device of claim 5, wherein the first conduit is provided with an inlet and an outlet.

7. The device of claim 5, further provided with a second wall positioned opposite the first wall, with the deformable sheet between the walls, the second

wall defining a second conduit between the second wall and the deformable sheet.

8. The device of claim 7, wherein the second conduit is provided with an inlet
5 and an outlet.

9. The device of claim 1, wherein the actuator is selected from the group containing: electrostatic actuators, piezoelectric actuators, thermoelastic actuators and magnetic actuators.

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10. The device of claim 1, wherein some or all of the device is made from silicon.

11. A method for inducing motion on fluids or solids, the method comprising:
15 providing a structure with a deformable sheet formed to present a structural wave,
displacing the structural wave,
thereby imparting displacing forces on a adjacent fluid or solid.

20 12. The method of claim 11, wherein the actuator is operated to continuously displace the structural waves.

13. The method of claim 11, wherein the deformable sheet is a deformed using a peripherally supporting frame.

14. The method of claim 11, using a beam as the deformable sheet.
15. The device of claim 14, wherein the beam is coupled to an elastic foundation.
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16. The method of claim 11, providing a first wall against the deformable sheet so as to define a first conduit between the first wall and the deformable sheet.
17. The method of claim 16, providing the first conduit with an inlet and an
10 outlet.
18. The method of claim 16, further providing a second wall positioned opposite the first wall, with the deformable sheet between the walls, the second wall defining a second conduit between the second wall and the deformable
15 sheet.
19. The method of claim 18, providing the second conduit with an inlet and an outlet.
20. The method of claim 11, wherein actuation of the deformable sheet is selected from the group containing: electrostatic actuation, piezoelectric actuation, thermoelastic actuation and magnetic actuation.
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21. A device for inducing motion on fluids or solids substantially as described in the present specification, accompanying drawings and appending claims.

22. A method for inducing motion on fluids or solids substantially as described in the present specification, accompanying drawings and appending claims.